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ABSTRACT

This handbook is intended to assist guidance counselors involved in helping special needs students choose vocational programs. Included in the manual are an overview of 9 special needs populations; position statements of the American School Counseling Association and on rehabilitation and school counselors working together; guidelines for selecting, administering, scoring, and reporting results of tests used in assessing special needs students for educational programs; prevocational policy for mainstreamed students; lists of 40 occupations with the largest projected growth and 20 fastest growing occupations for 1982-1995; a description of typical course offerings in area vocational-technical schools; descriptions of 33 different programs offered in area vocational-technical schools; and guidelines for administering different types of standardized vocational tests. (MN)

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VOCATIONAL GUIDANCE FOR SPECIAL NEEDS STUDENTS

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A Handbook for

Helping Counselors Do A Better Job

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VOCATIONAL GUIDANCE FOR SPECIAL NEEDS STUDENTS:

A Handbook for

HELPING COUNSELORS DO A BETTER JOB

by

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VOCATIONAL GUIDANCE FOR SPECIAL NEEDS STUDENTS--HELPING COUNSELORS DO A BETTER JOB

Introduction

The impact of federal legislation on secondary schools is being felt in all levels and grades. This impact is especially of concern in vocational programs. Prior to the passage of legislation dealing with the education of the special needs, counselors had little trouble placing students into vocational programs. Many were placed in the same manner as the "regular" students if they were placed at all. However, legislation mandates that all programs be available to the special needs students or that they should have equal access to such programs. Undoubtedly, the selection process for identifying these populations are different than the process used for the "regular" students. New methods and techniques must be employed to identify the special students who can best benefit from the demanding vocational programs in the secondary school system. Guidance counselors need help in serving the needs of special needs students.

Need for the Manual

The Pennsylvania Advisory Council on Vocational Education (1982), indicated that counselors need additional help in providing students with information on occupations and vocational training. The pre-service preparation program does not appear to be sufficient to enable counselors to provide adequate vocational guidance and career counseling according to the Council. The Council recommends that inservice training programs for existing guidance counselors need to be instituted to enable counselors to address the needs of students through guidance assistance in making choices of training and careers.

The Educational Policies Commission of the National Education Association identified ten imperative educational needs of youth that impact on the need for this manual. The first can be summarized as "all youths need to develop saleable skills and the understandings and attitudes that make the worker an intelligent and productive participant in economic life." For students to satisfy this need they must first be placed in programs that will help them achieve at a pace that is congruent with their abilities and aspirations. Effective program placement requires that guidance counselors have a good grasp of the occupations and competencies needed to enter vigorous vocational programs as well as skills needed to be successful in such a program. Additionally, students need assistance in locating and identifying programs most suited for their skills and potentials. Special needs students have receive less assistance over the years than did the "regular" students. A large percentage of special needs citizens have been a great burden to society because proper assistance have not been given them and because they have been isolated from the productive roles enjoyed by the rest of the population. Without sound and realistic educational and working programs, special needs students will remain segregated at an enormous cost to society. Guidance counselors can be of greater assistance if properly educated about the vocational programs available to special needs students that will prepare these students for productive roles in the work world.

As part of the Pennsylvania State Plan for Vocational-Technical Education programs (1983-87), several goals concerning guidance (general) and guidance of the handicapped and disadvantaged students have received attention. Goal 2, objective 8 states, "Provide special guidance services for the disadvantaged and handicapped to enhance their employability skills when enrolled in vocational

education programs." Other goals also address the needs of the handicapped and disadvantaged students. If these goals and objectives are to be accomplished, guidance counselors will need much help in identifying those students who will best benefit most from specialized education and training in the least restrictive environment and with the least safety hazards or problems.

Objectives of the Manual

The primary purpose of this manual is to help guidance counselors do a more effective job in assisting special needs students choose vocational programs. Specifically, the following objectives will be accomplished.

1. To provide guidance counselors with policy statements regarding implementation of P. L. 94-142 and their role as counselors of students enrolled in an area vocational technical school.
2. To acquaint guidance counselors with recent occupational diagnostic evaluation instruments.
3. To provide guidance counselors with experience in some of the basic skills in the different vocational technical shops.
4. To provide guidance counselors with selection considerations when working with special needs students for placement in an area vocational technical school.

SUPPLEMENTAL SERVICES FOR SPECIAL NEEDS STUDENTS

The notion of designing and implementary supplemental services for special populations in mainstream vocational education programs reflects a continuing concern among vocational educators to provide programming consistent with the least restrictive environment provision of the Education For All Handicapped Children Act of 1976 (P.L. 94-142). The Carl D. Perkins Vocational Act of 1984 (P.L. 98-524) emphasizes educating traditionally underrepresented groups in

vocational education programs. This act mandates certain services in Title II, Part A, specifically for handicapped and disadvantaged individuals:

> (b) Each local education agency shall...provide information to handicapped and disadvantaged students and parents to such students concerning the opportunities available in vocational education at least one year before the students enter the grade level in which vocational education programs are first generally available in the State but in no event later than the beginning of the ninth grade, together with the requirements for eligibility for enrollment in such programs (Sec 204).
>
> (c) Each student who enrolls in vocational education programs shall receive: (1) assessment of the interests, abilities, and special needs; (2) special services including adaption of curriculum, instruction, equipment, and facilities; (3) guidance, counseling, and career development activities; and (4) counseling services design to facilitate the transition from school to post-school employment and career opportunities (Sect 204).

In response to the new Carl D. Perkins Vocational Education Act, local administrators (including guidance counselors and directors of pupil services) will need to take steps to accomplish the followings:

- mandated information dissemination about the availability of local vocational education programming to all identified special education students [Sec 204(b)];
- guidelines for individualized vocational assessment, career counseling, supportive service planning, and job placement and monitoring services following completion of vocational programs [Sect 204(c)];
- auditing excess cost of mainstreamed placements;
- developing reliable and valid documentation of numbers of special needs individuals served at the local level (Sect 423); and
- guidelines for coordinating services with Job Training Partnership Act programs and other community based organizations serving special needs individuals.

OVERVIEW OF SPECIAL NEEDS POPULATIONS

There are a vast array of conditions associated with the special needs population. Each special needs learner is different, even different from those

students in the same category. Each students learning style and learning rate is different from any other, and they will progress at different rates based upon their abilities and characteristics.

Learning Disabled

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. (P. L. 94-142, 121 a.5)

General Characteristics

1. Behavioral or Emotional Problems
   - -reacting to frustrating situations inappropriately
   - -inability to stay on task
   - -difficulty in developing appropriate peer relationships
   - -hyperactivity
   - -difficulty with problem solving skills
   - -short attention span
   - -low self concept
   - -insecurity
   - -dependence on others

2. Perceptual Problems
   - -problems with letter and figure recognition
   - -left-to-right progression problems
   - -reversing letters in words
   - -problems with written and oral directions
   - -word interpretation problems
   - -difficulty remembering what was read
   - -difficulty recognizing sounds
   - -difficulty understanding verbal directions
   - -difficulty remembering and comprehending directions

3. Motor Problems
   - -lack of balance
   - -lack of coordination
   - -poor gross/fine motor skills
   - -left-right difficulty

4. Language Problems
   -limited verbal speech
   -poor grammar
   -poor sentence structure
   -difficulty putting thoughts into words

Mentally Retarded

Mentally retarded means significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects educational performance. Categories include mildly retarded, moderately retarded, and severely retarded (P. L. 94-142).

General Characteristics
- -less than average learning capacity
- -difficulty analyzing situations or tasks
- -limited reasoning skills
- -short attention span
- -low frustration tolerance
- -difficulty comprehension
- -verbal expression problems
- -recall problems
- -low reading and math skills
- -low scores on intelligence and achievement tests
- -generalization problems
- -limited problem solving skills
- -negative self concept

Emotionally Disturbed

Serious emotionally disturbed means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

1. An inability to learn which cannot be explained by intellectual, sensory, or health factors.

2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

3. Inappropriate types of behavior or feelings under normal conditions.

4. A general pervasive mood of unhappiness or depression.

5. A tendency to develop physically symtoms or fears associated with personal or school problems.

General Characteristics
- -looses tough with reality
- -disruptive to others in the class
- -problems being accepted in the classroom
- -negative self-concept
- -lack self-confidence
- -hyperactivity
- -frequently disorganized
- -uncooperative and deviant
- -frequently from lower class
- -strange mannerisms
- -frequent mood changes
- -easily distracted
- -distructive to self and others
- -impulsive, overactive, overanxious
- -cannot control behavior
- -easily frustrated
- -can be aggressive
- -short attention span
- -may display signs of instability
- -may become severely depressed

Visually Impaired

Visually impaired means an impairment that even with corrections adversely affects an individual's educational performance. The term includes both partially sighted and blind individuals (P. L. 94-142).

General Characteristics
- -problems with writing
- -holds things close to eyes
- -may blink a lot
- -may appear to have crossed eyes
- -may rub eyes
- -may be sensitive to bright lights
- -may be clumsy
- -low reading level
- -poor motor coordination
- -poor self-concept
- -problem focusing on objects
- -depends upon other senses

Auditory Impaired

Auditory impaired individuals who have a sense of hearing inadequate for success in learning situations. There are two categories: 1) deaf--impairment so severe that the individuals is impaired in processing linguistic information through hearing, with or without amplication which adversely affects educational performance, and 2) hard of hearing--impairment, whether permanent or fluctuating, that adversely affects educational performance (Public Law 94-142).

General Characteristics
- -loud or weak voice
- -low reading
- -expression problems
- -may appear lazy
- -frequent frustration
- -doesn't respond when spoken to
- -omits sound/words from sentences
- -ignores directions
- -frequent colds or ear aches
- -word pronunciation problems
- -fails to respond to questions

Speech Impaired

Speech impaired means a communication disorder such as stuttering, impaired articulation, a language impairment, or a voice impairment, which adversely affects educational performance (P. L. 94-142).

General Characteristics
- -lisps
- -adds to words
- -trouble forming interpersonal relationships
- -delayed speech
- -stutters
- -speaks to fast/slow
- -low reading level
- -loud or low voice volume
- -limited vacabulary
- -poor self-concept
- -deletes sounds from words
- -substitutes one letter for another

Physically Handicapped

Physically impaired means a severe physically impairment which adversely affects educational performance. The term includes impairments caused by congenital anomaly, impairment caused by disease, and impairments from other causes (P. L. 94-142).

General Characteristics
- -jerky, shaky movements
- -limited movements
- -poor self concepts
- -slow and limited mobility
- -problems developing interpersonal relationships
- -poor muscle controls
- -poor coordinations
- -poor motor skills

Health Impaired

Health impaired means limited strength, vitality or alertness, caused by chronic or acute health problems such as heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes, which adversely affects educational performance (P. L. 94-142).

General Characteristics
- -frequently very thirsty or hungry
- -frequently school absence
- -tires easily
- -poor self concept
- -may appear frail
- -inattentive
- -restless or hyperactive

Disadvantaged

Disadvantaged means persons (other than handicapped persons) who have academic or economic disadvantages and require special services, assistance or programs to enable them to succeed in vocational education programs (P. L. 94-142). Academically disadvantaged means that an individual lacks reading and

writing skills, lacks mathematical skills, or performs below grade level. Economically disadvantaged means that one or more of the following conditions exists--the family income is at or below the national poverty level, the individual or the parent/guardian is unemployed, the individual or the parent is receiving public assistance funds, the individual is institutionalized or under state guardianship (P. L. 94-482).

General Characteristics

- -behavior problems
- -lacks self-confidence
- -short attention span
- -different cultural background
- -poor reading, writing, mathematic skills
- -limited proficiency in speaking English
- -poor self-concept
- -frequently absent
- -comes from low income family
- -lack motivation
- -poor language and vocabulary
- -under acheiver
- -performs below grade level

POSITION STATEMENT--AMERICAN SCHOOL COUNSELING ASSOCIATION

The adoption of Public Law 94-142, The Education of All Handicapped Children Act, by the federal government has provided the framework for more appropriate education programming for exceptional students. Such components of the law as due process, individual educational programming, and least restrictive environment offer opportunities to utilize the counselor's skills for the benefit of this portion of their clientele. It is particularly important that the role of the counselor in these procedures is clearly defined and understood by all concerned. The purpose of this position statement is to define those roles/functions that are and are not reasonably within the scope of the counselor's duties in relation to the implementation of Public Law 94-142.

The American School Counselor Association believes that school counselors might reasonably be expected to perform the following functions in the implementation of Public Law 94-142.

1. To assist in the identification of handicapped students, including the administration of certain initial screening devices.

2. To serve as a member of the multi-discplinary team for the purpose of defining the most appropriate program for handicapped students.

3. To prepare such portions of the student's individual educational program as may relate to services to be performed or coordinated by the school counselor.

4. To provide input as to a student's present level of functioning affective needs, and the appropriateness of certain programs to meet those needs.

5. To provide supportive counseling for the parents of handicapped students as it relates to the educational objections stated in the individual educational plan.

6. To provide guidance and counseling services to handicapped students consistent with those provided to non-handicapped students.

7. To provide supportive counseling for handicapped students consistent with the objectives stated in the individual educational plan.

8. To consult with teachers on the affective needs of exceptional students assigned to their classes.

9. To assist in the development and implementation of professional development activities for staff working with exceptional students in self-contained or mainstreamed environments.

10. To serve in a liaison capacity with vocational-technical schools, regional service units and other agencies in matters relating to handicapped students.

The American School Counselor Association also believes that there are certain responsibilities pertaining to the implementation of Public Law 94-142 that are NOT PRIMARILY those of the school counselor, although, the counselor may be involved in varying degrees in these duties. Practical consideration of local conditions and states regulations must limit the counselor's involvement in the following activities.

1. To serve as the local educational agency's one representative in formal due process procedures related to the placement of or programming for handicapped students.

2. To prepare individual educational programs for handicapped students orther than those portions related to guidance services.

3. To act as the only source of information concerning the special education program of a district.

4. To make decisions concerning the placement or retention of exceptional students.

5. To service in any supervisory capacity in relation to the implementation of Public Law 94-142.

6. To serve as a member of the multi-disciplinary team reviewing placement referrals for students who are not normally a part of the counselor's case load.

POSITION STATEMENT--REHABILITATION AND SCHOOL COUNSELOR WORKING TOGETHER

The passage of Public Law 94-142 places the responsibility of providing public education for all special needs children (ages 3 through 21) on the local public schools. Although the responsibility rests with the school system, state agencies are required to share information, expertise, and services. The law makes it national policy to ensure that all handicapped children have a free appropriate public education that emphasizes special education and related services designed to meet their unique needs.

Specifically, rehabilitation counselors and school counselors need to communicate with each other as frequently as possible. Both rehabilitation and school counselors should be included on the individual educational plan teams. Services to the high-school age handicapped population should include vocational rehabilitation counseling and preparation services (e.g. corrective surgery, living arrangements, hospitalization, prosthetic appliances, transportation).

Rehabilitation counselor should provide consultation on the social and vocational apsects of diabilities as well as technical assistance with vocational program planning.

School counselors should help rehabilitation counselors through appropriate communications concerning the progress and needs of students. School and rehabilitation counselors should share information about student interests, aptitudes, educational and vocational goals. Rehabilitation and school counselors are responsible for implementing services required by the individual student's needs.

School and rehabilitation counselors should jointly develop and arrange appropriate aptitude, interest, and achievement testing as well as medical

psychological, and vocational evaluations.

The rehabilitation and school counselors must work together to assist the student in developing and implementing a rehabilitation program that will lead to appropriate employment. This program may include further educational or vocational training as necessary.

In conclusion, it is imperative that handicapped children receive the educational and related services necessary to function in society in the least restrictive environment. As team members, school counselors and rehabilitation counselors can be of greatest assistnce to handicapped children by combining resources and expertise in the development and implementation of individual educational plans now mandated by federal legislation. The long-needed cooperation between school counselors and rehabilitation counselors will be of tremendous benefit in accomplishing these goals.

ASSESSING SPECIAL NEEDS STUDENTS FOR EDUCATIONAL PROGRAMS

Selecting a Test

Test selection requies some minimum understanding of tests and test development. It also requires a lot of common sense in judging how well the fixed characteristics of a test relate to your own counseling needs for the type of information that a specific test or inventory provides. There certainly is no one "best" aptitude test or interest inventory for everyone who wants to measure either one, nor is there one "best" instrument for any of the categories of tests. The following precedures are suggested as a practical guide for test selection:

1. Identify those tests that by reputation and/or use seem to

measure what you want to measure.

2. Identify those tests that also are designed to meet your own information needs.

3. Identify those tests that also fit within the practical limitations under which you function.

4. Identify those tests that also meet acceptable standards of technical development and quality.

5. Identify those tests that also meet your own personal and professional judgements of validity.

6. Select the instrument(s) that best survive(s) this sequential process.

It is possible to rely solely on the opinions expressed in published reviews of the test to make a specific decision. It is possible to rely solely on personal examination of the test manual(s) and the test(s) itself to make a specific decision. To make a final choice, it is high advantageous to try out the several different tests that have passed the various criteria of suitabiliy. First and at a minimum, you should be come familiar with the instrument by taking them yourself. In addition, most counselors can get the cooperation of a few students who would be willing to take one or more different test instruments with the full understanding that they will be helping in the process of selecting a test that their peers may be taking in the future. Students can provide useful information about a test they have taken by answering questions such as:

1. Did you understand the questions?

2. Were the questions fair?

3. Were the directions clear and was the time reasonable?

4. Are you scores reasonable? Do they seem accurate?

5. Do the results relate to other things that you know or feel about yourself?

6. Are the results helpful in any way?

7. Would you recommend this test to your friends?

The counselor, in using a new test with a few students, will be able to develop an initial "feel" for its utility. Do the results confirm information already known about a student? Do they provide new insight? Would you be able to work better with students in the future if you had results from this test? The wise buyer of a new automobile takes it for a road test; the wise buyer of a new vocational guidance instrument should put that instrument through a "testing process."

DECISION RULES:
POLICY STATEMENT FOR RESPONSIBILITIES OF USERS OF STANDARDIZED TESTS
(American Personnel and Guidance Association)

In human service agencies, decisions about client needs may be made on the basis of direct observation or historical information alone. Further refinement of direct observation and historical data can often be obtained by employing standardized tests.

Deciding whether to test creates the possibility of three classes of errors relative to the agency functions of description, diagnosis, prescription, selection, placement, prediction, growth evaluation, etc.

First, a decision not to test can result in misjudgements that stem solely from inadequate data.

Second, tests may be used well, producing data that could improve accuracy in decisions affecting the client but that are not utilized.

Third, tests may be misused through inappropriate selection, improper

administration, inaccurate scoring, incompetent interpretation of indiscriminate, inadequate, or inaccurate communication.

To reduce the chance for errors, the responsible practioner will always determine in advance why a given test should be used. This provides protection and benefits for both the client and the agency. Having a clearly developed rationale increases the probable benefits of testing by indicating how a particular set of information , when used by an individual or set of individuals, will contribute to a sounder decision without prejudice to either the client or the agency.

Defining Purpose of Testing:

1. Decide whether you will be testing to evaluate individuals, groups or both.

2. Identity your interests in the particular target population in terms of the agency's purposes and capabilities.

3. Determine limits to diagnosis, prediction or selection created by age, racial, sexual, ethnic or cultural characteristics of those to be tested.

4. Develop specific objectives and limits for the use of test data in relation to each of the component service areas of placement/selection, prediction (expectancies), description/diagnosis and growth studies (assessing change over time).

    A. Placement: If the purpose is selection or placement (selection is a simple in-out sort of placement), the test selector and interpreter must know about the programs or institutions in which the client may be placed and be able to judge the consequences of such placement or exclusion for the client.

    B. Prediction/expectancies: If the purpose is prediction, the persons deciding to test and/or interpret the results must understand the pitfalls of labeling, stereotyping and prejudging people. Ways to avoid these potentially invidious outcomes should be known.

    C. Description/diagnosis: If the purpose is diagnosis or description, the selector or interpreter should understand enough about the general domain being measured to be able to identify

those aspects adequately measured and those not.

D. Growth/change assessment: If the purpose is to examine growth, the person designing the study and interpreting the results needs to know the many problems associated with such measurement:
   1) the unreliability of change measures;
   2) the pitfalls in using norms as reference points;
   3) the associated problems of articulation and comparability;
   4) the limitations of scoring scales, such as grade equivalents, that may not have the comparable meaning which they appear to have at different scale levels.

Determining Information Needs:

1. Assess the consequences for the clients of both testing or not testing.

2. Determine what decisions can be made with existing information to avoid unnecessary data-gathering efforts.

3. Limits data gathering to those functions or aptitude, achievement, interests/attitudes/values and perceptual-motor skills that are directly relevant in making decisions about delivery of services to a particular individual or group.

4. Identify whether the test being considered can provide acceptable levels of precision (reliability) for the decision being made.

5. Identify whether the data obtained can be cross-validated against other available data as a part of the decision-making process.

6. Determine the amount and form of data to be shared on the basis of maximum relevance to the agency's purpose and capabilities.

Identifying Users of Test Information:

1. Data should be prepared so that they can be comprehended by the person using the data for decision making.

2. Limit access to users specifically authorized by the law or by the client.

3. Identify obsolescence schedules so that stored personal test data may be systematically reclassified and relocated to historical files or destroyed.

4. Process personal data used for research or program evaluation so as to assure individual anonymity.

Test Selection:

Tests should be selected for a specific measurement purpose, use and

interpretation. The selection of tests should be guided by information obtained from a careful analysis of the following major considerations:

-What are the characteristics of the population to be tested?

-What knowledge, skills, abilities or attitudes are to be assessed?

-What are the purposes for testing?

-How will the test scores be used and interpreted?

When completed answers to these questions have been obtained, selection or development of tests should be directed toward obtaining measures that are congruent with the stated needs for assessment in terms of the purposes, content, use, interpretation and particular characteristics of the individuals who are to be tested.

Select Appropriate Tests:

1. Select tests that have been demonstrated, to the satisfaction of professional specialist, as appropriate for the characteristics of the population to be tested.

2. Select tests that are within the level of skills of administration and interpretation possessed by the practioner.

3. Determine whether a common test or different tests are required for the accurate measurement of groups with different characteristics.

4. Recognize that different tests for cultural, ethnic and racial groups constitute inefficient means for making corrections for differences in prior life experiences, except where different languages are involved.

5. Determine whether persons or groups that use different languages should be tested in either or both language and in some instance by prior testing for bilingualism.

Employ User Participation in Test Selection:

Actively involve the persons who will be using the tests (administering, scoring, summarizing, interpreting, making decisions) in the selection of tests that are congruent with the locally determined purposes, conditions and uses of

the measurement.

Select a Test to Satisfy Local Use:

1. Give specific attention to how the test is designed to handle the variation of motivation among persons taking the test, the variation or bias in response to the test content and the effects of the presence or absence off guessing in the responses to the test questions.

2. Determine whether tests standardized for nationwide use show evidence that such tests yield comparable results for individuals or groups with cultural differences.

3. Identify and analyze the effects of working speed and language facility in relation to the criteria of human performance that are expected to result from the test.

Consider Technical Characteristics of Tests:

1. Select only published or locally developed tests that have documented evidence of the reliability or consistency of the measure.

2. Select tests that have documented evidence of the effectiveness of the measure for the purpose to be served: placement/selection, prediction (expectancy), description/diagnosis, or growth studies (change over time). A test is rarely equally effective for the four common test uses.

3. Consider the procedures used in standardization and norming for relevance to the local population and the desired use and interpretation.

4. Use separate norms for men and women only when empirical evidence indicates this is necessary to minimize bias.

5. Determine the degree of reliability (or validity) demanded of a test on the basis of the nature of the decisions to be based on test scores.

6. A test for final diagnosis or selection requires a higher degree of reliability than an initial screening test.

7. Explicitly list and use the ease and accuracy of the procedures for scoring, summarizing and communicating test performance as criteria for selecting a test.

8. Recognize that the technical characteristics and norms of standardized tests may vary when used with different populations. The selection process should include administration to verify that the test is functioning with the technical characteristics and desired results for th local population and local uses.

Practical constraints of cost, conditions and time for testing must be considered but not used as the primary criteria for test selection.

Test Scoring:

The measurement of human performance depends on accurate and consistent application defined procedures for creditng the responses made by person being tested. The procedures for scoring and recording test performance must be continuously audited for consistency and accuracy.

1. Routinely rescore a sample of the test answer sheets to verify the accuracy of the initial scoring.

2. Employ systematic procedures to verify the accuracy and consistency of machine scoring of answer sheets.

3. Obtain a separate and independent verification that appropriate scoring rules and normative conversions are used for each person tested.

4. Verify as accurate the computation of raw scores and the conversion of raw scores to normative or descriptive scales prior to release of such information to the tested person or to users of the test results.

5. Routinely check machine or manual reports of test results for accuracy. The person performing this task must be qualified to recognize inappropriate or impossible scores.

6. Develop and use systematic and objective produces for observing and recording the conditions and behaviors of persons being tested and make this a part of the scores or test results that are reported.

7. Clearly label the scores that are reported and the date that a particular test was administered.

Test Interpretation:

Test interpretation encompasses all the ways we assign value to the scores. A test can be described as a systmatic set or series of standard observations of performances that all fall in some particular domain. Typically each observation yields a rating of the performance (such as right or wrong and pass or fail), then these ratings are counted and this count becomes the basis of the scores. Such scores are usually much more stable than the result of any single performance. This score reliability creates the possibility of validity greater

than can be obtained from unsystematic or nonaggregated observations.

The proper interpretation of test scores starts with understanding these fundamental characteristic of tests. Given this, the interpretation of scores from a test entails knowledge about (1) administration and scoring procedures; (2) scores, norms and related technical features; (3) reliability; and (4) validity.

Adequate test interpretation requires knowledge and skill in each of these areas. Some of this information can be mastered only by studying the manual and other materials of the test; no one should undertake the interpretation of scores on any test without such study.

Scores, Norms and Related Technical Features:

Standard procedures for administering and scoring the test limit the possible meanings of scores. Departures from standard conditions and procedures modify and often invalidate the criteria for score interpretation.

The result of scoring a test is usually a number (or a set of numbers) called a raw score. Raw scores taken by themselves are not usually interpretable. Some additional steps must be taken.

The procedures either translate the numbers directly into descriptions of their meaning (e.g., pass or fail) or into other numbers called derived scores (e.g., standard scores) whose meaning stems from the test norms.

To interpret test scores, these procedures and the resulting descriptions or derived scores need to be thoroughly understood. Anything less than full understanding is likely to produce at least some, and probably many, serious errors in interpretation. The following are imperatives for interpreting tests.

1. Examine the test manuals, handbooks, users' guides and technical reports to

determine what descriptions or derived scores are produced and what unique characteristics each may have.

2. Recognize that direct score interpretations such as mastery and nonmastery in criterion-referenced test depend on arbitrary rules or standards.

   A. Report number or percent of items right in addition to the indicated interpretation whenever it will help others understand the quality of the examinee's test performance.

   B. Recognize that the difficulty of a fixed standard, such as 80 percent right, will vary widely from objective. Such scores are not comparable in the normative sense.

   C. Recognize that when each score is classified as pass, fail, mastery, nonmastery or the like, that each element is being given equal weight.

3. Use the derived scores that fit the needs of the current use of the test.

   A. Use percentile ranks for direct comparison of individuals to the norm or reference group.

   B. Use standard scores or equal unit scaled scores whenever means and variances are calculated or other arithmetic operations are being used.

4. Recognize that only those derived scores that are based on the same norm group can be compared.

5. Consider the effect of any differences between the tests in what they measure when one test or form is equated with another, as well as the errors stemming from the equating itself.

   Give greater credence to growth or change shown by the same test including level and form) than equate measures except when practice effects or feedback have destroyed the validity of a second use.

6. Evaluate the appropriateness of the norm groups available as bases for interpreting the scores of clients.

   A. Use the norms for the group to which the client belongs.

   B. Consider using local norms and derived scores based on these local norms whenever possible.

7. Acquire knowledge of specific psychological or educational concepts and theories before interpreting the scores of tests based on such knowledge.

COMMUNICATING TEST RESULTS

Communication consists of reporting data in such a way that it is comprehensible and informative. The responsible practitioner reports test data with a concern for the user's need for information and the purposes of evaluating the significance of the information.

There must also be a concern for the right of the individual tested to be informed regarding how the results will be used for his or her benefit (informed consent), will have access to the results (right to privacy), and what safeguards exist to prevent misuse.

Where standardized test data are being used to enhance decisions about an individual, the practitioner's reponsibilities are as follows:

Know the Manual:

1. Become thoroughly familiar with the publisher's manual before attempting to "explain" any results.

2. Develop skills needed to communicate results of tests, using concepts that are frequently misunderstood before communicating results to clients, the public, or other recipients of the information.

Know the Limits:

1. Inform the person receiving the test information that "scores" are approximations, not absolutes, and indicate the SEM or the margin of error in some other way, such as by reporting score interval rather than points.

2. Candidly discuss with the person receiving the test information any qualifications necessary to understand potential sources of bias for a given set of test results relative to their use with a specific individuals.

3. Emphasize that test data represent just one source of information and should rarely, if ever, be used alone for decision making.

Informed Consent:

1. Inform the person receiving the test information of any circumstances that could have affected the validity or reliability of the results.

2. Inform the examinee of what action will be taken by the agency and who will be using the results.

3. Obtain the consent of the examinee before using test results for any purpose other than that advanced prior to testing.

Right to Privacy:

Inform the examinee of steps to be taken to correct any erroneous information that may be on file as a result of testing.

Background Information:

1. Include background information to improve the accuracy of understanding about any numerical data.

2. Identify the purposes for which the reported data would be appropriate.

Politics:

Be aware that public release of test information provides data for all kinds of purposes and that some these may be adverse to the interests of those tested.

Averages and Norm:

1. Clarify in particular that "average" on a standardized test is a range, not point, and typically includes the middle 50 percent of the group being considered.

2. Qualify all group data in terms of the appropriateness of the norms for that group.

PRE-VOCATIONAL POLICY FOR MAINSTREAMED STUDENTS

The intent of the pre-vocational program is for a one year vocational experience with the possibility of being mainstreamed into a regular vocational program. Students are provided varied educational and vocational experiences which are directly related to the kinds of skills required in other shop areas. Students are evaluated on attitude, knowledge, skills, along with teacher-counselor checklist (see Pre-Vocational Rating Checklist), work sample evaluation, and administrative, teacher, counselor and/or parent conferences when necessary.

Early in the pre-vocational program, students' interest and aptitude is assessed. Later, students' classwork and shop projects are evaluated. Students are reminded to discuss shops and interest with teachers, counselors, parents and others.

Counselors Duties in the Pre-vocational Program:

1. Discuss criteria for placement as explained by

   a. attendance
   b. attitude
   c. performance
   d. work sample evaluation
   e. teacher ratings
   f. student interest and aptitude
   g. counselor/parent conferences,
   h. classroom and shop visits.

2. Scheduled students in an individual conference with the counselor with the counselor and/or teacher as to the shop(s) in which they may have an interest.

3. Arrange for each student to spend some time in the shop area of interest to talk with the instructor and students, to see the shop in operation, and to talk with peers and parents about what they observed.

4. Review the shop choices and shop visits with teachers, counselors,and support personnel to determine if student desires are compatible with the evaluations.

5. Notify each student as to his/her schedule for the coming year which could include one of the following:

   a. placement in a vocational program
   b. return to home school
   c. work-study program

PRE-VOCATIONAL RATING CHECKLIST

Student _____

Instructor _____

ATTITUDE RATINGS	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. Is able to get along with others.	___	___	___	___	___
2. Is willing to help others.	___	___	___	___	___
3. Respects others' property and job equipment	___	___	___	___	___
4. Demonstrates good manners.	___	___	___	___	___
5. Communicates well with people.	___	___	___	___	___
6. Exhibits mature attitudes.	___	___	___	___	___
7. Easily makes friends with others.	___	___	___	___	___
8. Avoids improper mannerisms.	___	___	___	___	___
9. Seeks ways to self-improvement.	___	___	___	___	___
10. Demonstrates self-confidence.	___	___	___	___	___
11. Displays honesty and sincerity.	___	___	___	___	___
KNOWLEDGE RATINGS					
1. Copes with frustrating situations and/or is able to meet new challenges.	___	___	___	___	___
2. Assumes responsibility.	___	___	___	___	___
3. Is able to accept constructive criticisms.	___	___	___	___	___
4. Follows directions.	___	___	___	___	___
5. Works safely and carefully.	___	___	___	___	___
6. Works without constant supervision.	___	___	___	___	___
7. Is accurate in job duties.	___	___	___	___	___

8.	Willing to do same job repeatedly.	___	___	___	___	___
9.	Displays effective use of time and materials.	___	___	___	___	___
10.	Complete assigned work on time.	___	___	___	___	___
11.	Is accurate and neat in job duties.	___	___	___	___	___
12.	Keeps work area neat and clean.	___	___	___	___	___
13.	Will seek necessary information and assistance to successfully complete a task.	___	___	___	___	___
14.	Maintains good personal hygiene and grooming.	___	___	___	___	___
15.	Attendance is good.	___	___	___	___	___
16.	Is reliable.	___	___	___	___	___
17.	Pursues extra tasks.	___	___	___	___	___
SKILLS RATINGS						
1.	Displays hand-eye coordination.	___	___	___	___	___
2.	Physically capable of doing job.	___	___	___	___	___
3.	Manual dexterity is good.	___	___	___	___	___
4.	Can perform several activities as nearly the same time.	___	___	___	___	___
5.	Can use tools and equipment safely.	___	___	___	___	___

Forty Occupations with Largest Job Growth 1982-95

Occupation	Change In Total Employment (In Thousands)	Percent of Total Job Growth	Percent Change
Building Custodians	779	3.0	27.5
Cashiers	744	2.9	47.4
Secretaries	719	2.8	29.5
General Clerks, Office	696	2.7	29.6
Salesclerks	685	2.7	23.5
Nurses, Registered	642	2.5	48.9
Waiters & Waitresses	562	2.2	33.8
Teachers, Kindergarten & Elementary	511	2.0	37.4
Truckdrivers	425	1.7	26.5
Nursing Aides & Orderlies	423	1.7	34.8
Sales Representatives, Technical	386	1.5	29.3
Accountants & Auditors	344	1.3	40.2
Automotive Mechanics	324	1.3	38.3
Supervisors of Blue-collar Workers	319	1.2	26.6
Kitchen Helpers	305	1.2	35.9
Guards & Doorkeepers	300	1.2	47.3
Food Preparation & Service Workers, Fast Food Restaurants	297	1.2	36.7
Managers, Store	292	1.1	30.1
Carpenters	247	1.0	28.6
Electrical & Electronic Technicians	222	.9	60.7
Licensed Practical Nurses	220	.9	37.1
Computer Systems Analysts	217	.8	85.3
Electrical Engineers	209	.8	65.3
Computer Programmers	205	.8	76.9
Maintenance Repairers, General Utility	193	.8	27.8
Helpers, Trades	190	.7	31.2
Receptionists	189	.7	48.8
Electricians	173	.7	31.8
Physicians	163	.7	34.0
Clerical Supervisors	162	.6	34.6
Computer Operators	160	.6	75.8
Sales Representatives, Nontechnical	160	.6	27.4
Lawyers	159	.6	34.3
Stock Clerks, Stockroom & Warehouse	156	.6	18.8
Typists	155	.6	15.7
Delivery & Route Workers	153	.6	19.2
Bookkeepers, Hand	152	.6	15.9
Cooks, Restaurant	149	.6	42.3
Bank Tellers	142	.6	30.0
Cooks, Short Order, Specialty & Fast Food	141	.6	32.2

NOTE: This figure only includes information on occupations with a 1982 employment of 25,000 or more. The data for 1995 are based on moderate-trend projections, and it appears that 40 of the nation's 1,700 occupations will provide about 1/2 of the total growth. These 40 should provide 12.8 of an expected 25.6 million new jobs.

FIGURE 1

TWENTY FASTEST GROWING OCCUPATIONS
1982-95

Occupation	Percent Growth in Employment	Employment Growth (in 1,000's)
Computer Service Technicians	96.8	53*
Legal Assistants	94.3	43
Computer Systems Analysts	85.3	217*
Computer Programmers	76.9	205*
Computer Operations	75.8	160*
Office Machine Repairers	71.7	43*
Physical Therapy Assistants	67.8	22
Electrical Engineers	65.3	209*
Civil Engineering Technicians	63.9	23*
Peripheral EDP Equipment Operators	63.5	31*
Insurance Clerks, Medical	62.2	53
Electrical & Electronic Technicians	60.7	222*
Occupational Therapists	59.8	15
Surveyor Helpers	58.6	23
Credit Clerks, Banking & Insurance	54.1	26
Physical Therapists	53.6	26
Employment Interviewers	52.5	19
Mechanical Engineers	52.1	109*
Mechanical Engineering Technicians	51.6	24*
Compression & Injection Mold Machine Operators, Plastics	50.3	47
Total Projected Job Openings		1,570,000
Total 'High Tech' Job Openings		1,296,000

NOTE: Includes only detailed occupations with employment of 25,000 or more. Data for 1995 is based on moderate-trend projections. 'High Tech' occupations are marked with a *. Please note that this implies a very liberal definition of 'high tech' occupations.

FIGURE 2

TYPICAL COURSE OFFERINGS IN AREA VOCATIONAL TECHNICAL SCHOOLS

Three-Year Programs (Grades 10, 11, & 12)

1. Auto Body Repair
2. Auto Mechanics
3. Cabinetmaking
4. Carpentry
5. Commercial Air Conditioning
6. Commercial Art
7. Computer Programming and Design Concepts
8. Cosmetology
9. Diesel Mechanics
10. Drafting and Design Technology
11. Electro-Mechanical Technology
12. Electronics Technology
13. Graphic Arts (Printing)
14. Industrial Electricity
15. Interior Decorating
16. Machine Shop
17. Masonry and Plastering
18. Plumbing and Pipefitting
19. Quantity Foods
20. Sheet Metal
21. Small Engine Repair
20. Television Technology and Production
21. Textiles Production and Fabrication

22. Transportation and Traffic Management

23. Vocational Agriculture

24. Welding

Two-Year Programs (Grades 11 and 12)

1. Dental Assistant

2. Distributive Education

3. Health Assistant

4. School-Industry Cooperative

One-Year Programs (Grade 12)

1. Business Information Processing

Post Secondary or Post Graduate Programs

Practical Nursing

DISCRIPTIONS OF PROGRAMS IN AREA VOCATIONAL TECHNICAL SCHOOLS

Auto Body Repair

This program includes methods used to repair automobile bodies. Students learn dent removal, repair of cuts, methods of refinishing, types of finishes, replacement of parts, repair and replacement of upholstered parts, and installation of electrical and mechanical controls related to windows, doors, and air conditioners.

Auto Mechanics

This instructional program includes motor tune-up, motor overhaul and rebuilding, repair and installation of both standard and automatic transmissions, front-end alignment, carburetor and ignition systems, brakes, and clutches. This program is directed toward training potentially skilled mechanics who may find a career not only n the automotive industry but in aircraft or farm machinery repair as well.

Diesel Mechanics

Many job opportunities exist in this area of mechanics. This program helps students to develop skills to safely and properly service diesel engines used to power automobiles, trucks, tractors, generators and other machinery and equipment. Studies include the use of shop manuals, hand tools, precision measuring and testing instruments and machine tools. Instruction includes diagnoses and trouble-shooting, disassembly and replacement of worn or damaged parts such as pistons, bearings, gears, valves, bushings, cylinder liners, cylinder heads, cam shaft, crank shaft, journals, fuel-injector pump, fuel nozzles, blowers, and etc.

Building Trades Maintenance

Emergency repairs to equipment and facilities is the emphasis of this program. Students learn industrial and commercial job skills as related to electrical maintenance, basic carpentry, sheet metal construction, heating equipment maintenance, control equipment function and repair, compressors, appliance repair, welding, masonry and basic construction, carpentry elements, blueprint reading and sketching, purchasing and estimating. Large industrial and commercial plants are alert of obtaining individuals having training or experience in this field.

Business Information Processing

This program is designed to help students develop skills as a data entry operator such as computer terminal (CRT) operators, microcomputer operators, keytape operators, and keypunch operators. Students receive instruction in bookkeeping and accounting as it relate to computers. Some expertise is developed toward word processing as students go through the program.

Cabinet Making

The cabinet maker is skilled craftsman who creates things of usefulness and beauty. Students learn to identify and use the different wood species used in cabinet making. Instruction includes safety, care and use of the cabinet makers' tools and their proper application. Emphasis in joinery, adhesives, shop drawing, cost estimating, layout, milling, and methods of wood finishing are among the few areas covered.

Carpentry

The building of residential homes and industry plants provide many job opportunities for individuals with carpentry skills. In this program,

instruction covers the use of both hand and power tools. Elements of the program include joinery, bench and cabinet work, trade mathematics, blueprint reading and sketching, layout foundations, rough framing, finishing (interior and exterior), and roof framing. Estimating, purchasing and costing of work is also included.

Commercial Air Conditioning

This program helps students to develop skills needed to install, services, and repair air conditioning units and refrigeration equipment. Upon completion of this program, students will be able to work on large installation jobs that requires one to read and interpret blueprints or drawings. On small installation projects, the graduate will be able to prepare drawings and blueprints needed to complete the job. Basic pipe fitting skills are also developed.

Commercial Art

The serious student desiring a career as an illustrator, advertising artist, silk screen artist, technical illustrator, medical illustrator, fashion designer, as well as many other related fields will do well in this program. Students choosing this program will develop the necessary skills in pen and ink techniques, technical illustrating, live-model drawing, still-life drawing, sketching, anatomy, elements and principles of design, illustration, block printing and silk printing and layout.

Computer Programming and Design Concepts

This program is designed to help students master computer programming. Students learn basic information about the computer and its operation in performing specific functions. Several computer languages are covered including BASIC, RPG, and COBOL. Computer training includes applications in systems with emphasis on business-related aspects.

Cosmetology

This program involves the scientific study of beauty culture. Students learn the physiology of facial bones, hair, finger nails and other features as they apply to beauty culture. Practical work includes hair styling, permanent waves, hair cutting, bleaching, hear setting, scalp and facial treatments. Upon successful completion of this program, graduates are eligible to take the state examination for a cosmetology license.

Dental Assistant

A demanding program to prepare individuals to work in a dental practice, students develop skills relative to dental terminology, dental anatomy, instrumentology, x-ray development, and model making. Some program graduates may be employed as a "generalist" and do all types of dental laboratory work. Others may be more specialized in such areas as making crowns and bridges, arranging artificial teeth on dental appliances, processing plastic material, working with ceramic (porecelain) or making castings of gold or other metal alloys.

Distributive Education

Sales and service is the basic emphasis of this program. Students develop techniques of salesmanship, marketing fundamentals, business ethics and law, merchandize mathematics, business systems, and customer motivation and behavior. The program includes basic bookkeeping and accounting as well as supervised on-the-job experience in cooperation with local businesses.

Drafting and Design Technology

More than nine out of ten drafters work in private industry with engineering or architectual firms. A graduate of this program may be expected to have a broad array of drafting skills that may include the design of products,

structures, or interstate highway system. Students in the program progress through modern drafting and engineering practices and equipment to computer-assisted drafting (CAD).

Electronic Technology

The program helps students to develop an understanding of the principles involved in industrial electronics, radio, television, radar communications, and other electronic fields. The program includes theory and laboratory experimentation as well as practical experiences and employs the use of various types of testing equipment.

Graphic Arts

This program helps students to develop skills in letterpress and offset printing. The program covers layout, operation of presses, process camera work and platemaking, negative processing, use of composing machines and numerous other modern equipment found in the field. Student learn in an atmosphere approaching a commercial shop in methods, procedures, and results.

Health Assistant

The health assistance program helps student learn entry level skills in many health occupations. Graduates of this program work under the direct supervision of the professionals to whom they are assigned. Graduates are expected to communicate well with people and make them feel comfortable and secure as they receive health care. Students in this program learn the basic procedures involved in examination and treatment of patients.

Industrial Electricity

Residential, commercial, and industrial wiring and maintenance are the areas in which students receive instruction in this program. Electricians install

electric wiring switches, lighting fixtures, electrical and electronic control systems, motors, servo-mechanical devices, and other types of equipment. Students learn state and local wiring codes and are able to work from blueprints.

Interior Decorating

A program designed to teach the student the correct planning and artistics design of homes and commercial interiors, much attention is given to harmonious color schemes, the study of past and present furniture styles, and how to arrange furniture and accessories. Students learn how to select and purchase furniture, lighting fixtures, pictures, window treatments, wall coverings, and floor coverings. Hands-on skills in making custom window treatments, bedspreads, and various decorative items are part of the program.

Machine Shop

The machinist's work requires a high degree of accuracy, in ten-thousandth of an inch. This program helps students to develop this accuracy. Students enrolled in this program will learn tool and die making, instrument making, machine operation, layout techniques, setup techniques, lathe work, milling machine use, shaping, drilling, grinding, assembly work, heat treating, threading, tapering, and angles. Reading a blueprint is emphasized.

Masonry and Plastering

The mason works with stone, brick, concrete, concrete blocks, artificial stone, and related materials. This program helps students to become a craftman in using these materials to construct walls, partitions, fireplaces, chimneys, and foundations. Reading and mathematic skills are important in using blueprints and making cost estimates.

Plumbing and Pipefitting

Graduates of this program may obtain employment with an industrial plant, plumbing contractor, or go into business for themselves. Students learn how to install, maintain, and repair solid and liquid waste systems, sanitation, vent, gas, airlines, and various types of plumbing fixtures. Basic skills learned are making pipe joints, joint wiping, soldering, threading, welding, and brazing. Installation of plastic and glass pipes is covered in this program.

Quantity Foods

Food preparation and service in hotels, cafeterias, restaurants, tea rooms, and hospitals offer graduates of this program many job opportunities. Student of the program obtain valuable and practical experience operating the school cafeteria or restaurant. Student learn preparation of menus, purchasing of food supplies, and the cooking and serving of quality food. Health and sanitation laws are stressed.

School-Industry Cooperative

This program is a cooperative effort of local business and industry with the school. Students spend one-half day in on-the-job training in varied jobs throughout the community. These are jobs in which the school does offer formal instruction, however, the teacher does provide related general instruction useful on the job.

Sheet Metal

Instruction covered in this program included forming materials, soldering, seaming, welding, drilling, riveting, blueprint reading, estimating, drafting, operation, and care of hand and power tools, and pattern development. Graduates of this program can expect to find employment in fabrication of airplanes,

utensils, and furniture as well as roofing, installing gutters, flashing, spouting, and ventilation.

Small Engine Repair

With increased popularity of snowmobiles, outboard motors, motorcycles, and garden tractors, graduates of this program will find many opportunities for employment. Students in the program learn skills from basic tune-ups to complete engine overhaul. Two- and four-cycle engines are covered in detail through this program.

Television Technology and Production

Special emphasis is placed on theory and practical application as it relates to basic fundamental principles of electricity and electronics and telecommunication. Students receive hands-on instruction in the safe use and care of tools and equipment used to diagnose and analyze problems associated with electronics and hardware. Students learn audio/video taping, editing, and broadcasting.

Textile Production and Fabrication

Entry into the clothing or shoe industry is primary goal of this program. Students learn about fabrics used in making clothing, pattern cutting, and sewing to make a finished product. Safe machine operation is covered.

Transportation and Traffic Management

Graduates of this program will know how to purchase stock, implement and use a stock control system, receive stock, inspect stock, classify materials, determine storage methods, operate material handling equipment, manage and control inventory, and ship stock as well as maintain an effective records system.

Welding

Welding is a method of joining metal by applying heat, pressure, or both with or without filler metal to produce a permanent fusion. Students in this program learn the welding process used in MIG, TIG, automatic welding, plastics, electric and oxy-acetylene welding as well as cutting of metals.

Practical Nursing

Instruction and practical experience is provided in the fields of medical-surgical nursing, obstetric, pediatrics, central supply and diet therapy. The program is divided into pre-clinical instruction and clinical instruction given in a local hospital. Program graduates are eligible to take the Practical Nurse Board Examination.

Electro-Mechanical Technology

This program helps students to develop skills needed to diagnose and repair problems that may occur in electro-mechanical equipment such as computer terminal, micro-computers, robots, electronic typewriters, vending machines, word processors, calculators, microprocessors and video games. Program completers can expect to be well paid in positions of employment in this field.

Vocational Agriculture

This program is designed to provide opportunities for students interested in working out-of-doors or indoors. The program prepares students in one or more of the following areas: 1) agricultural production (growing farm animals and crops), 2) agricultural mechanics (maintenance and repair of machines and equipment used on the farm), 3) agricultural products (meats and vegetables processing and packaging), 4) agricultural supplies and services (retail sale of fertilizers, insecticides, herbicides, feeds and seeds), 5) forestry (woodlots

and timber management and harvesting), 6) horticulture (growing of in and out-of-doors ornamentals--flowers, shrubs and trees and may include vegetables and fruits); and, 7) agricultural resources (management of soils, water, and wildlife).

STANDARDIZED VOCATIONAL TESTING

Vocational testing by standardardized tests consists of two primary types: interest and aptitude. Often a work evaluation is also included. It must be remembered that vocational evaluation is not a single descrete activity occurring at limited interval during the school year. It is an ongoing process to continually accummulate information.

The use of vocational interest surveys usually occurs prior to training, to try to focus the long term goals into an appropriate area. Vocational aptitude tests are primarily used to formulate goals and short term objectives and evaluate a student's progress towards them. At the end of an instructional period, achievement tests may be given to evaluate the attainment of vocational goals and the student's potential for competitive work success.

It is important to look beyond the scores obtained and gather valuable observational data from the testing situation. "Watching the way a client proceeds to solve a problem, handles frustration, displays ego-strength, perserveres, concentrates, and follows directions and communicates with the examiner provides valuable diagnostic indices which can help give guidance to further evaluation programming" (Brolin, 1976).

The uses of vocational interest inventories is especially relevant to the special needs learner, since it is assumed that placing a student in a high interest career will enhance their potential for vocational success. Working within high-interest career clusters should be motivating for the student. However, these inventories are intended to evaluate only the aspirations and

interests of the student. They do not determine the feasibility of these interests. Therefore, it is important to evaluate aptitudes as well as interests.

Aptitude tests are used to evaluate the degree to which a student is likely to succeed in a future activity. They are designed to predict future performance in various careers. Together with the vocational interest measures, the educator can combine the aptitude measures to develop appropriate goals for the student.

While in a vocational training program, it is necessary to determine how effective is the instruction. It is also useful to assess the overall impact of the instruction at the conclusion of a unit. Work evaluation measures and achievement tests perform this function. They may also be used to determine the extent to which the learner is sufficiently skilled to enter a more demanding training program, or even competitive employment.

Standardized vocational test measures are quite popular. Unfortunately, the following limitations, suggested by Schloss and Sedlack (1985), indicate that standardized vocational testing results must be viewed cautiously. Often, the response requirements of some of the tests may result in the special needs learner's scores not reflecting their actual "performance" aptitude. Even when actual performance items are used, there is some question whether or not a student's behavior under assessment conditions accurately reflects actual work performance. Finally, intervening variables (e.g., instruction) occurring after the initial assessment may invalidate the predictions that were based on prior behaviors.

Taking these limitations into consideration, the educator should interpret the test results carefully. The following information should be considered.

1. Has the student been exposed to the tasks on the test previously?

2. Is he/she motivated to perform well?

3. Does the student possess the necessary test-taking behavior?

4. Does the test format and the target response accurately reflect the work demands in an actual vocational or work setting? (Schloss and Sedlack, in press)

Finally, formal vocational assessment data should alway be collaborated with informal data about the student's basic skills and learning characteristics. Anecdotal information, observational data, medical records, and personality/characteristics are all very important as one trys to accurately assess the interests, abilities, and work products of students.

A. VOCATIONAL INTEREST INVENTORIES

1. California Occupational Preference Scale (COPS)
   a. Population: Age 14 to adulthood
   b. Format: A free response format to identify individual occupational preferences.
   c. Subscales: Fourteen occupational clusters, both professional and skilled (e.g., technical professional/skilled, service professional/skilled, outdoor).

2. Career Awareness Inventory
   a. Population: General student population, late elementary and intermediate levels.
   b. Format: Multiple choice items emphasizing career information social attitudes and personal experience. Items may be completed independently or read to the student.
   c. Subscales: Nine sections--careers, worker, job occupations, awareness of educational requirements, personal acquaintance with workers, familiarity with occupations, high prestige jobs, common clustering jobs, and job requirements.

3. Career Maturity Inventory (CMI)
   a. Population: General student population.
   b. Format: Composed of an Attitude Scale (30 minutes) and Competence Test (20 minutes each part). Oral directions may be given to individuals with less than a sixth grade reading level.
   c. Subscales: Attitude Scale includes orientation to work, inde-

pendence in decision making, preference for career choice factors, and concept of career choice process. The Competence Test consists of five parts--self-appraisal, occupational information, goal selection, planning and problem solving.

4. Crowley Occupational Interests Blank
   a. Population: Age 13 and above, of average ability or less.
   b. Format: Takes 20 to 30 minutes.
   c. Subscales: Five interest areas--active/outdoor, office, social, practical, artistic. Five sources of job satisfaction--financial gain, stability/security, companionship, working conditions, and interest.

5. Geist Picture Interest Inventory (Revised) (GPII)
   a. Population: Age 8 to adults.
   b. Format: Self-administered picture triads of various job activities and related materials. Respondents indicate most and least liked.
   c. Subscales: One male and 12 females areas of general interest.

6. Kuder General Interest Survey (KGIS)
   a. Population: From 8 through adults.
   b. Format: Revision and downward extension of Kuder Preference Record-Vocational; sixth grade reading level.
   c. Subscales: Ten occupational scales--outdoor, mechanical, computational, scientific, persuasive, artistics, literary, musical social services and clerical.

7. Kuder Occupational Interest Survey (KOIS)
   a. Population: Grades 11-16, and adults.
   b. Format: One hundred triad inventory requiring respondent to choose one activity in each triad which is most and least preferred. A sixth grade reading level is required; administered in thirty to forty minutes.
   c. Subscales: Eight occupational scales; tries to show how ones preferences are like those typical of people in various occupations.

8. Minnesota Importance Questionnaire (MIQ)
   a. Population: General.
   b. Format: A 210 item questionnaire. When given paired statements, the student indicates degree of importance in an ideals job. It may be self-administered or administered orally if the individual has less than a fifth grade reading ability; takes about forty minutes.
   c. Subscales: Measures twenty vocational needs related to job satisfaction (e.g., activity, advancement, social status, co-workers, independence).

9. Minnesota Vocational Interest Survey
   a. Population: Secondary level males not planning to attend college.
   b. Format: Includes 158 triads representing non-professional occupations. The student indicates those most and least preferred.
   c. Subscales: Twenty-one occupational scales (e.g., baker, stock clerk, printer, carpenter), and nine area sclaes (e.g., mechanical, food service, outdoors).

10. Ohio Vocational Interest Survey
   a. Population: Grades 8 through 12.
   b. Format: Includes 280 items. Students respond by using a five (from "like very much" to "dislike very much"). Useful for those with limited reading ability; takes 60 to 90 minutes.
   c. Subscales: Twenty-four interest scales including machine work, personal service, clerical work, manual work, etc.

11. Reading-Free Vocational Interest Inventory
   a. Population: Retarded adolescents and young adults.
   b. Format: Student is presented with a series of three pictures and indicates preference for one. Each scale contains fifteen items. Pictured activities represent occupations in which mildly handicapped persons have been successful.
   c. Subscales: Eleven male clusters--automotive, building trades, food service, horticulture, and othes. Eight female scales --laundry, clerical, personal service, horticulture, housekeeping, and others.

12. Strong-Campbell Interest Inventory (SCII)
   a. Population: Age 16 and older.
   b. Format: Includes 325 items; majority is presented in a "like-indifferent-dislike" format. Individually or group administered; takes 20 to 60 minutes. Requires a sixth grade reading ability.
   c. Subscales: Six general occupational themes,23 basic inventory scales, 124 occupational scales, and 2 special scales. Is arranged in seven sections--occupations, school subjects, activities, amusements, types of people, preference between two people, personal characteristics.

13. Super's Work Values Inventory (WVI)
   a. Population: Grades 7-16, and adults.
   b. Format: Individuals respond to 45 value statements on a five point scale ranging from "very important" to "unimportant"; takes 10 to 20 minutes to administer.
   c. Subscales: Occupational choice and job satisfaction are measured through 15 value scales such as achievement, associates, security, independence, economic returns,

creativity.

14. Vocational Interest and Sophistication Assessment (VISA)
    a. Population: Mentally retarded individuals at secondary and post-secondary levels.
    b. Format: Individually administered pictorial inventory that uses verbal response to questions in each of the job areas to assess levels of knowledge about job information, understanding of job relations, and interest. Takes 20 to 40 minutes to administer.
    c. Subscales: Include 75 pictures depicting seven job clusters for males--farm and grounds, food service, garage, light industry, light maintenance, laundry, and materials handling. For females, 53 pictures for four job clusters--business/clerical, food service, housekeeping, and laundry.

15. Wide-Range Interest Opinion Test (WRIOT)
    a. Population: Grades K-12, and adults.
    b. Format: Line drawings of persons doing things, arranged in 150 triad combinations. Student indicates most and least liked pictures.
    c. Subscales: Eighteen occupational interests (e.g., art, mechanical, sales, outdoor, social services) and 7 vocational attitudes (e.g., risk, ambition, sedentariness).

B. VOCATIONAL APTITUDE TESTS

1. Bennet Hand Tool Dexterity Test
    a. Population: General, but requires speed and prior exposure to task.
    b. Format: The student is timed removing and fastening nuts, bolts, and washers of three sizes using an adjustable wrench, a smaller socket wrench, and a screwdriver. Elaboration of directions is permitted.
    c. Subscales: Measures functional proficiency in using standard tools; previous experience and mechanical aptitude contribute to the scores.

2. Bennet Mechanical Comprehension Test
    a. Population: General, but high levels of comprehension is required.
    b. Format: The student is given 68 questions pertaining to the illustrations of pulleys, gears, and levers. The test is group administered.
    c. Subscales: Assesses perception and knowledge of mechanical principles.

3. Crawford Small Parts Dexterity Test
    a. Population: General. Useful with those with limited reading

ability.

b. Format: Consists of two parts: 1. Student use tweezers to pick up and place a pin in a hole in a board, then places a collar over the pin; 36 pins and collars for 42 holes. 2. Student uses a small screwdriver to put 30 screws in a plate.

c. Subscales: Measures fine eye-hand coordination; both the number of parts and the amount of time required are recorded.

4. Differential Aptitude Test (DAT)

a. Population: General, but abstract thinking and writing skills are needed.

b. Format: Written test; administered in 2-6 sessions.

c. Subscales: Include 1) verbal reasoning, 2) numerical ability, 3) abstract reasoning, 4) clerical speed and accuracy, 5) mechanical reasoning, 6) space relations, 7) spelling and language usage.

5. General Aptitude Test Battery (GATB)

a. Population: General. requires reading, calculations, and following directions.

b. Format: Timed test; group administered; takes approximately 2 1/4 hours to complete. Used for training, job selection, and job placement; used to make predictions for around 500 occupations, mostly unskilled or semi-skilled.

c. Subscales: Measures nine aptitudes--general learning ability, verbal aptitude, numerical ability, spatial aptitude, form perception, clerical perception, motor coordination, finger dexterity and manual dexterity. Includes 8 paper-and-pencil subtests, and four involving apparatus.

6. MacQuarie Test for Mechanical Ability

a. Population: General. No reading ability required.

b. Format: Non-verbal, paper-and-pencil test measuring eye-hand coordination and finger dexterity skills required in a variety of office and factory tasks. Speed and spatial perception abilities are needed.

c. Subscales: Seven subtests including tracing, dotting, and copying; may be used separately or in combination.

7. Minnesota Clerical Test

a. Population: General. Requires visual-perceptual processing.

b. Format: Timed test assessing ability to match identical figures.

c. Subscales: Includes letter, number, and symbol differentiation. Measures speed and accuracy in clerical-related tasks.

8. Minnesota Paper Form Board Test (Revised)
   a. Population: General.
   b. Format: Includes 64 items consisting of two-dimensional diagrams separated into parts. The student choose a figure that includes the exact parts needed to construct the original diagram.
   c. Subscales: Assesses mechanical skills; is also used as a nonverbal measure of intellectual functioning.

9. Minnesota Rate of Manipulation Test
   a. Population: General. Often appeals to and is used with retarded persons.
   b. Format: The test consists of a formboard with 60 round holes cyclinders which are placed into the holes.
   c. Subscales: Five subtests to assess arm-hand dexterity--placing, turning, displacing, and one-hand and two-hand turning.

10. Non-Reading Aptitude Test Battery (NATB)
   a. Population: Individuals with limited verbval and reading skills, especially the disadvantaged and mentally retarded.
   b. Format: Similar to the GATB but requires no reading.
   c. Subscales: Measures the same nine aptitudes as the GATB; some subtests are identical, some are similar but different in content, and some are entirely different.

11. O'Connor Finger Dexterity and O'Connor Tweezer Dexterity Tests
   a. Population: General. Requires fine motor skills, but no reading ability.
   b. Format: 1) Finger dexterity--student inserts small pins in groups of three into ten rows of ten holes each.
      2) Tweezer dexterity--student inserts a small pin into each of the 100 holes using a metal tweezer.
   c. Subscales: Scoring based on time taken to complete task. The first test is used to predict success in some types of assembly ling work. The second test indicates manual aptitude for precision and steadiness with small tools.

12. Purdue Pegboard
   a. Population: General. No reading abilities is requried.
   b. Format: Individual places pins into pegboard, consisting of two row of 25 holes, using the right hand, left hand, and both hands together. The final subtest is timed (1 minute) and involves assembling pins, washers, and collars.
   c. Subscales: Provides a measure of gross motor dexterity (hand, fingers, and arms) and fine dexterity needed for small assembly work.

13. SRA Mechanical Aptitude
   a. Population: General. Fifth grade reading ability is required.

b. Format: Student identifies 45 common tools and their used; constructs 40 figures cut into two or three pieces; completes 124 arithmetic problems.

c. Subscales: Measures mechanical knowledge, space relations, and shop arithmetic.

14. Stromberg Dexterity Test

a. Population: General. Eye-hand coordination and color discrimination needed.

b. Format: Student is timed transferring set patterns of red, blue, and yellow disks from one board (with 54 holes) to another board, using only one hand.

c. Subscales: Assesses speed and accuracy of arm and hand movements. Useful mainly as a part of a test battery.

C. WORK EVALUATION/ACHIEVEMENT TESTS

1. Comprehensive Occupational Assessment and Training Systems (COATS)

a. Population: General.

b. Format: Contains work samples concerning employability attitudes, job matching, and living skills. Evaluation is based on ratings of skills proficiency, behavioral attributes, and student interpretation of job expectancies.

c. Subscales: Measures abilities in areas including food preparation, drafting skills, metal construction, etc. Each component consists of three program levels--assessment and analysis, prescription and instruction, and evaluation and placement.

2. MacDonald Vocational Capacity Scale (VCS)

a. Population: Retarded young adults (16-30) with IQ's of 84 or less, who are free from severe physical limitations.

b. Format: Through a battery of assessment measures, claims to differentiate between those in need of close and constant supervision in a day care program, those with sheltered workshop potential, and those capable of some level of competitive employment.

c. Subscales: Three rating scales--work habits, physical capacity, social maturity; five tests--general health, manual skills, arithmetic, motivation, and direction following.

3. McCarron-Dial Work Evaluation System

a. Population: Mentally retarded and chronically mentally ill persons.

b. Format: One predictive measurement system is formed from the results of 17 separate instruments and behavioral observations. The first portions are administered in a formal assessment setting and are usually completed in one day. Then, the client is placed in a work setting for final evaluation and undergoes systematic observation for two

weeks.

c. Subscales: Five psychological and production factors--verbal-cognitive, sensory, motor skills, social-emotional, and integration-coping.

4. Jewish Employment and Vocational Service Work Sample (JEVS)
   a. Population: General, but especially for the disadvantaged. May be used with mentally retarded.
   b. Format: Twenty-eight work samples covering 20 different work areas in 10 worker trait groups, which correspond with the Dictionary of Occupational Titles (DOT). Directions are given orally--reading is only required on specific tasks. A two week evaluation period starts with the samples timed. Clients are observed on a three point scale, indicating a quality or sub-competitive performance.
   c. Subscales: Sequence trait groups include handling, sorting, manipulating, routine checking/recording, classifying and filing, inspecting, etc.

5. Singer Vocational Evaluation System
   a. Population: Persons 17 to 30 years, educationally disadvantaged; physically, mentally, emotionally, or intellectually handicapped, and those with a poor work history.
   b. Format: Self-paced audio visual teaching machine presents programmed instruction on how to perform specific tasks in 17 self-contained work samples. Scores obtained through speed and accuracy; purports to help determine vocational aptitudes, interests, and work tolerances for vocational training.
   c. Subscales: Examples of the 17 occupational clusters include basic tools, bench assembly, electrical wiring, office and sales clerk, and others.

6. Talent Assessment Program (TAP)
   a. Population: High school students, mentally retarded adults, alcoholic males.
   b. Format: Eleven tests designed to evaluate work in industrial, technical, and service areas; can be administered in approximately two hours. Is a "hands-on" non-paper and pencil series of tests.
   c. Subscales: Evaluates physical dexterity, perception and discrimination, gross and fine motor and finger manipulation, and retention skills.

7. TOWER System (Testing, Orientation and Work Evaluation in Rehabilitation)
   a. Population: Physically and emotionally disabled persons, and the mentally retarded in some areas.

b. Format: Approximately 110 work samples in four occupational areas are presentd over a three week span in a gradual sequence from simple to complex with frequent demonstrations. Scores are obtained thrugh speed and accuracy. The results produce on profile of one's specific vocational skills and work personality.

c. Subscales: The 14 broad areas of work evaluation include clerical, electronics assembly, welding, sewing, lettering, and others.

8. VALPAR Component Work Sample Series

a. Population: Sheltered workshop employees, rehabilitation clients, and employed workers.

b. Format: Sixteen work samples are coordinated with the Dictionary of Occupational Titles (DOT). Scores are obtained through speed, accuracy, and behavioral observations.

c. Subscales: Sixteen work samples include small tools, size discrimination, simulated assembly, drafting, and others.

9. Vocational Assessment and Curriculum Guide (VACG)

a. Population: Mildly handicapped secondary and post-secondary learners.

b. Format: Consist of a comprehensive vocational evaluation survey completed by a person who has supervised the individual in a work setting. The questions in each category reflect priorities identified by employers. Results yield a profile of the person's behavioral and skill deficits with regard to competitive employment expectations.

c. Subscales: Includes 8 performance categories--attendance/endurance, independence, production, learning, behavioral, communication skills, social skills, and grooming/eating skills.

10. Vocational Information and Evaluation Work Samples (VIEWS)

a. Population: Mildly and moderately mentally retarded.

b. Format: Modified version of JEVS; involves training the person in the work task before evaluation. Sixteen work samples are coordinated with worker trait groups in the DOT. Samples are sequenced as follows: orientation, demonstration, and training. Administration requires from 5 to 8 days for the complete battery.

c. Subscales: The work samples measure work skills, levels of occupational independence and vocational interest. There are four categories of worker trait groups--elemental, clerical, machine skills, and crafts.

11. Wide-Range Employment Sample Test (WREST)

a. Population: Mild and moderate mentally and physically

handicapped.

b. Format: A short battery of ten work samples to evaluate dexterity and perceptual abilities; administered individually (about 1 1/2 hours) or to a small group (about 2 hours). Scores are comprised of the time taken, the number completed and the number of errors of each work sample. Individuals may practice the exercises prior to the timed work sample.

c. Subscales: Examples of the ten work samples include collating, stapling, bottle packaging, screw assembly, tag stringing, pattern making, and others.

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